

## ABSTRACT

The invention provides a device, used in a communication apparatus, for generating a mediate ring information and playing a ring signal based on the mediate ring information. The device comprises a receiving module, a processing module, an analyzing module, a storage module and a playing module. The receiving module receives an audio digital signal. The processing module divides the audio digital signal into a plurality of sub-signals in a predetermined period and then transfers the plurality of sub-signals into a plurality of sets of frequency spectrums. The analyzing module retrieves at least one frequency with largest amplitude in each of the plurality of sets of frequency spectrums respectively, and stores the retrieved frequencies in series to generate the mediate ring information. The storage module stores the mediate ring information and a plurality of predetermined tone information. The playing module retrieves the mediate ring information and one of the plurality of predetermined tone information from the storage module, generates the ring signal based on the mediate ring information and the retrieved predetermined tone information, and then plays the ring signal.